

Ensemble de Mandelbrot

Dessin d'une fractale : [l'ensemble de Mandelbrot](http://fr.wikipedia.org/wiki/Ensemble_de_Mandelbrot)

```
#!/usr/bin/env python
# -*- coding: utf-8 -*-
# version un peu aménagée du travail de BF, ba2 chimie 2012-2013
# ref : http://fr.wikipedia.org/wiki/Ensemble_de_Mandelbrot

from Tkinter import *
from random import randrange

def mandel2(c):
    z=0
    for h in range(0,50):          #nombre d'iteration
        z = z**2 + c
        if abs(z) > 2:           #abs(z) correspond au module de z
            break                #arrête l'execution du for si la condition
est remplie
    if abs(z) >= 2:
        return False
    else:
        return True

root = Tk()
w = Canvas(root, width=600, height=600, background='white' )
w.pack()

for hx in range(0,600,50):
    w.create_line(0,hx,600,hx,fill="blue")

for hy in range(0,600,50):
    w.create_line(hy,0,hy,600,fill="blue")

print ("Initializing...")

for x in range(0,600):
    real = x / 200.0 -2
    for y in range(0,600):
        img = y / 200.0 -1.5
        c = complex(real, img)
        if mandel2(c):
            w.create_line(x,600-y,x+1,601-y,fill="black")
            w.pack()

print ("Complete!")
```

Last
update: 2015/03/02 17:01 teaching:progappchim:ensemble_mandelbrot_2013 https://dvillers.umons.ac.be/wiki/teaching:progappchim:ensemble_mandelbrot_2013

```
root.mainloop()
```

Améliorations possibles : *cf.* l'article

https://www.researchgate.net/publication/272679245_NumPy_SciPy_Recipes_for_Image_Processing_Creating_Fractal_Images

From:
<https://dvillers.umons.ac.be/wiki/> - **Didier Villers, UMONS - wiki**

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Last update: **2015/03/02 17:01**

